

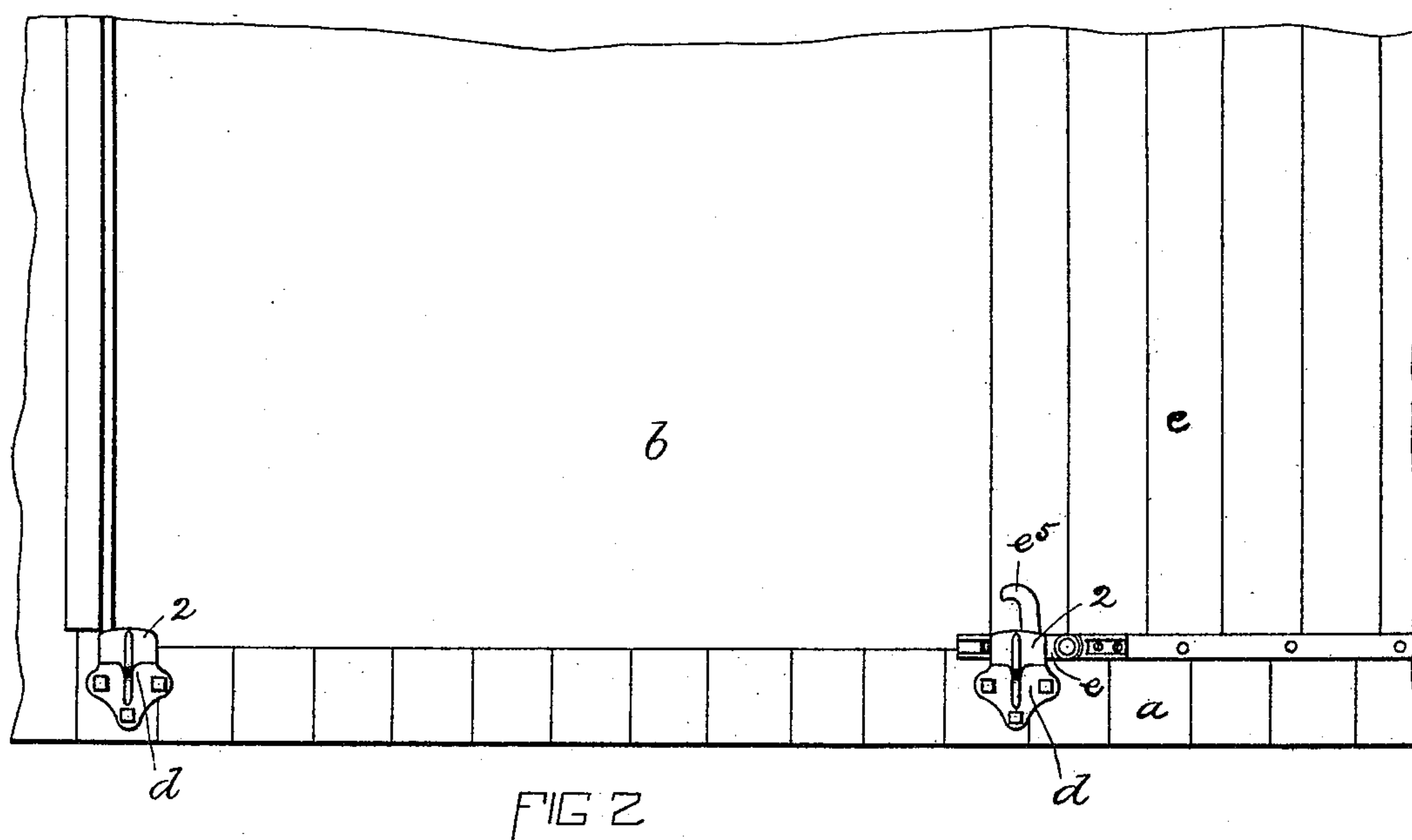
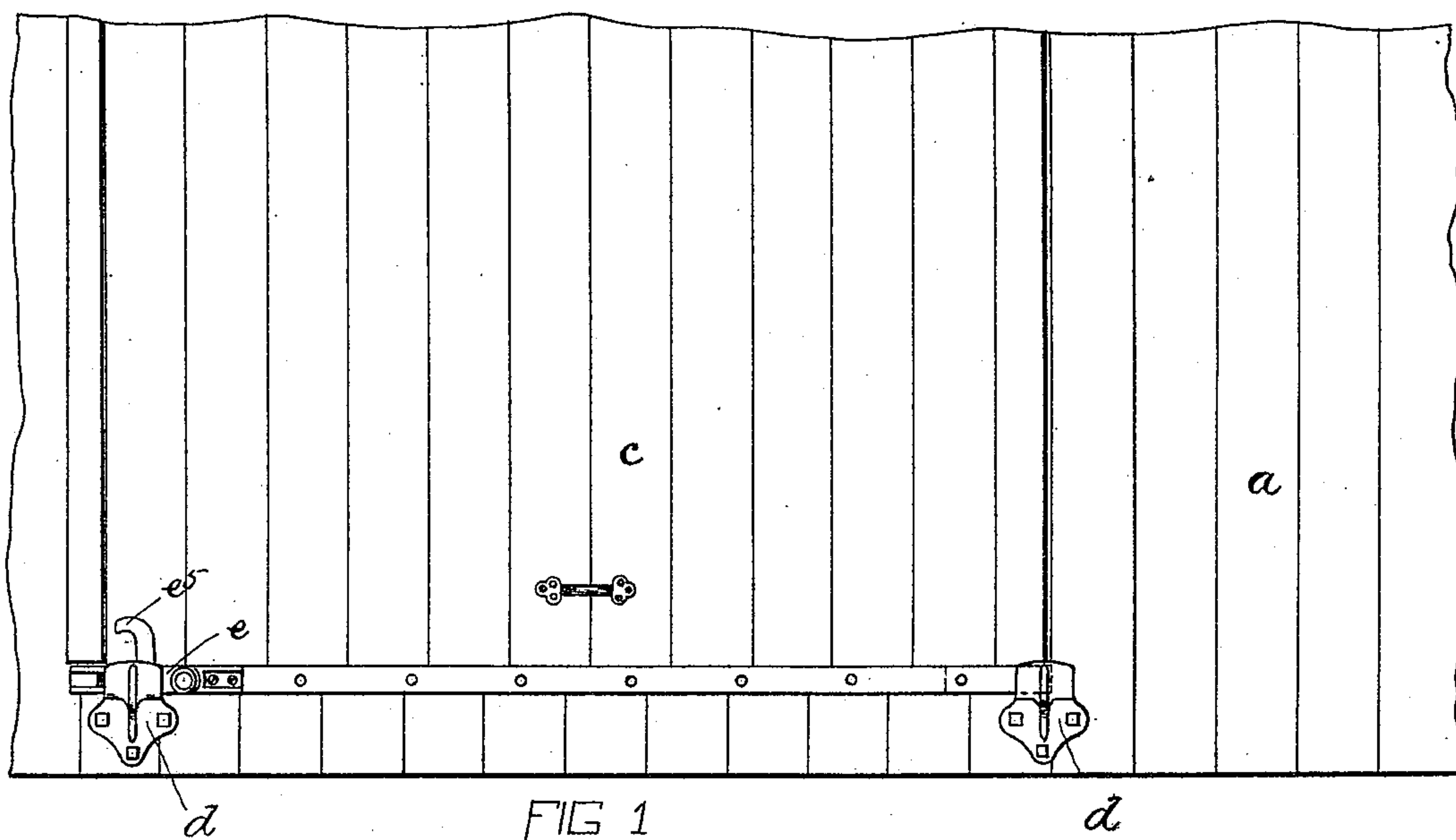
(No Model.)

2 Sheets—Sheet 1.

O. P. HIX.  
LATCH FOR SLIDING DOORS.

No. 459,906.

Patented Sept. 22, 1891.



WITNESSES  
*Ewing W. Hamlen.*  
*C. G. Bartlett.*

INVENTOR  
*O. P. Hix*  
*by M. B. Brown*  
*Attys.*

(No Model.)

2 Sheets—Sheet 2.

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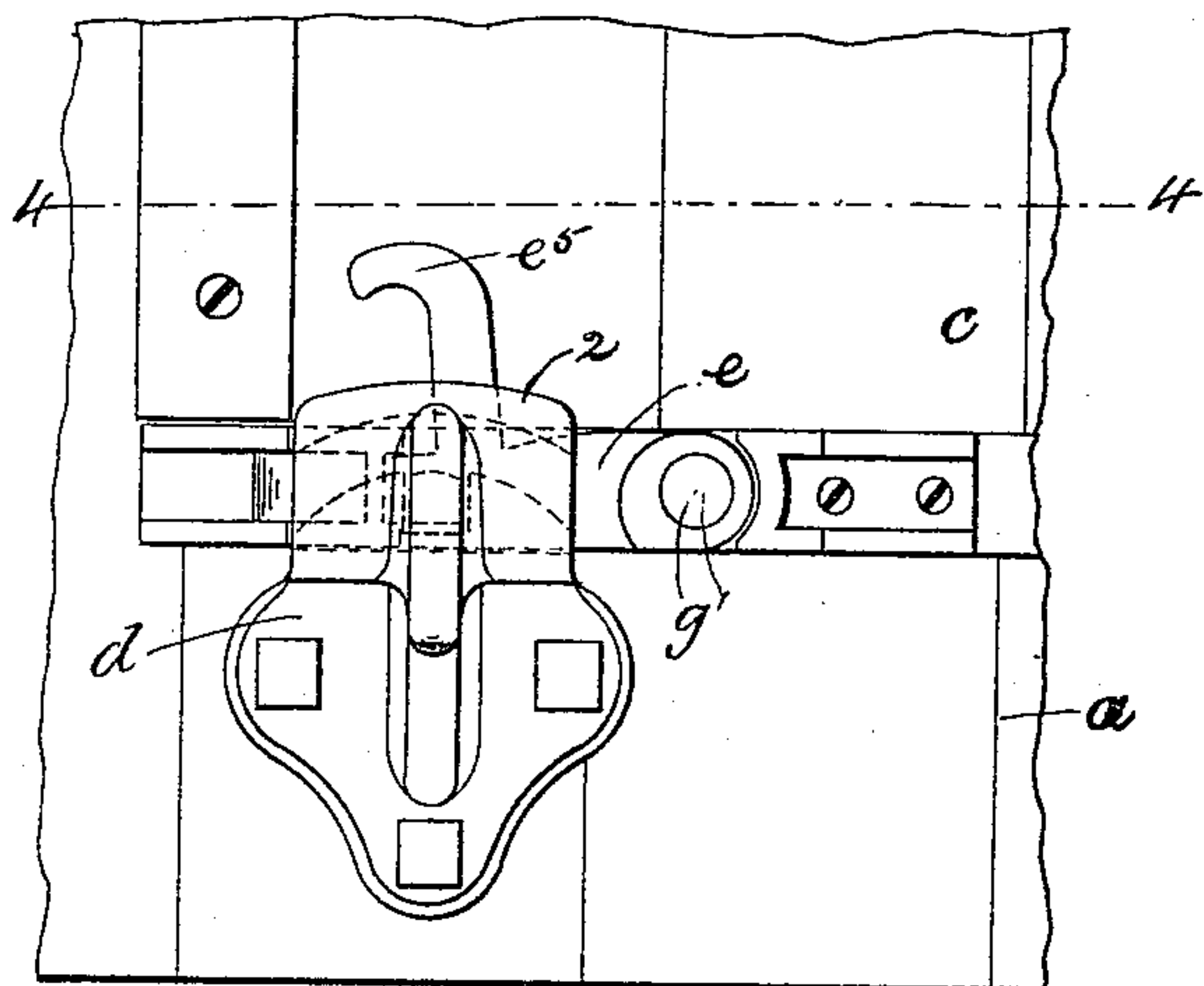


FIG 3

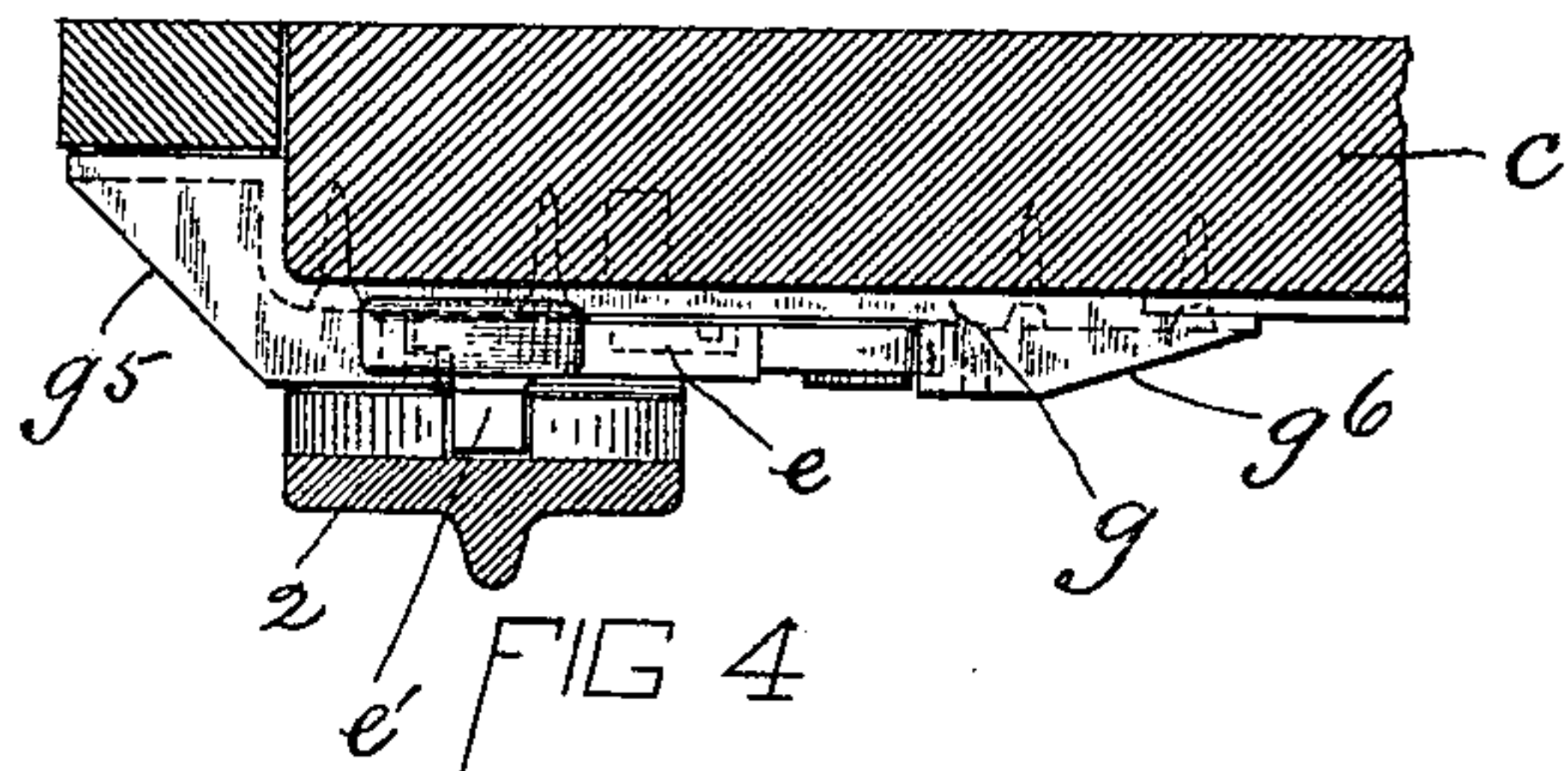


FIG 4

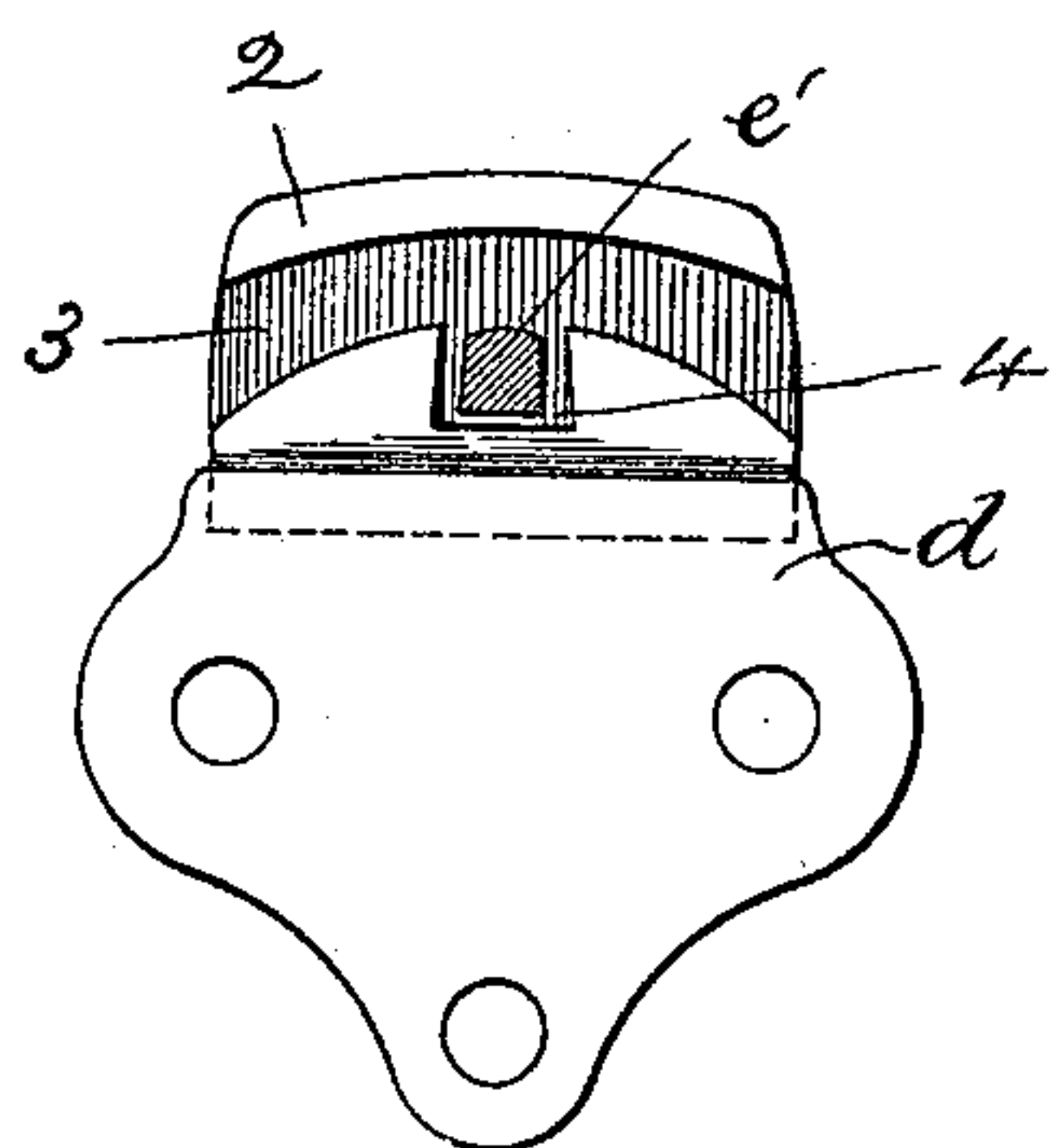


FIG 5

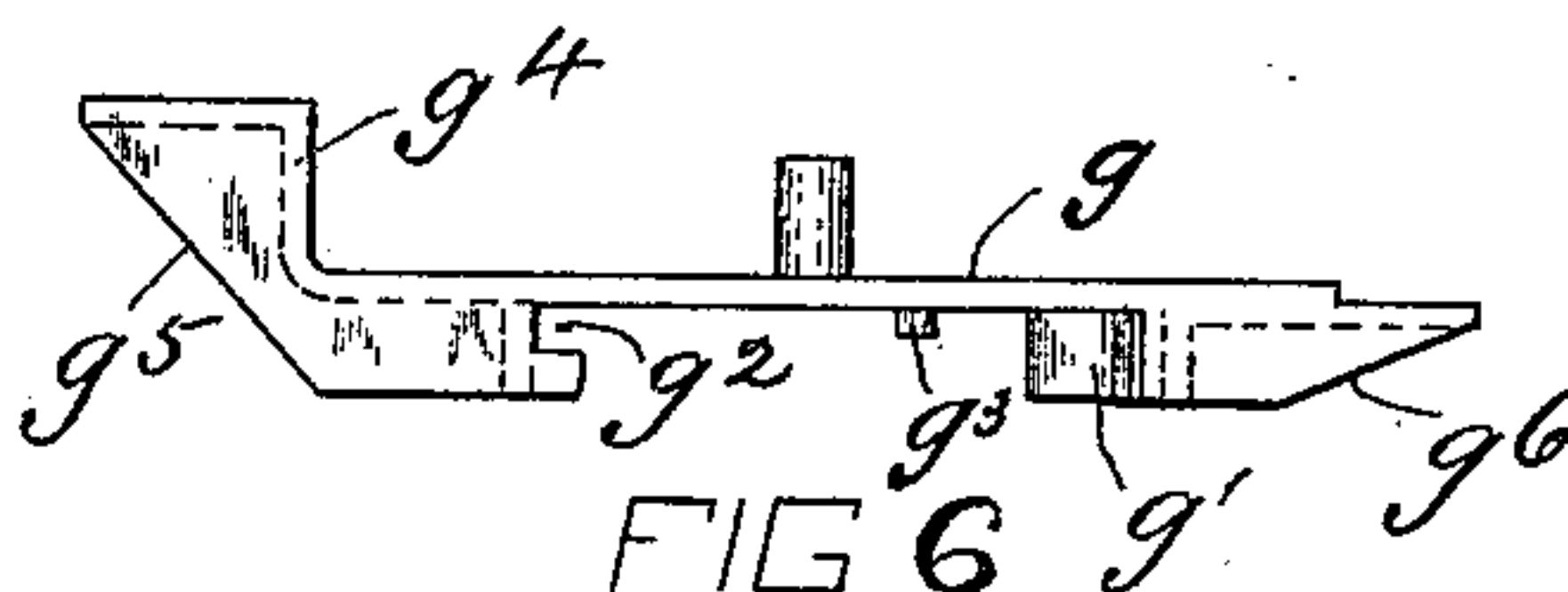


FIG 6

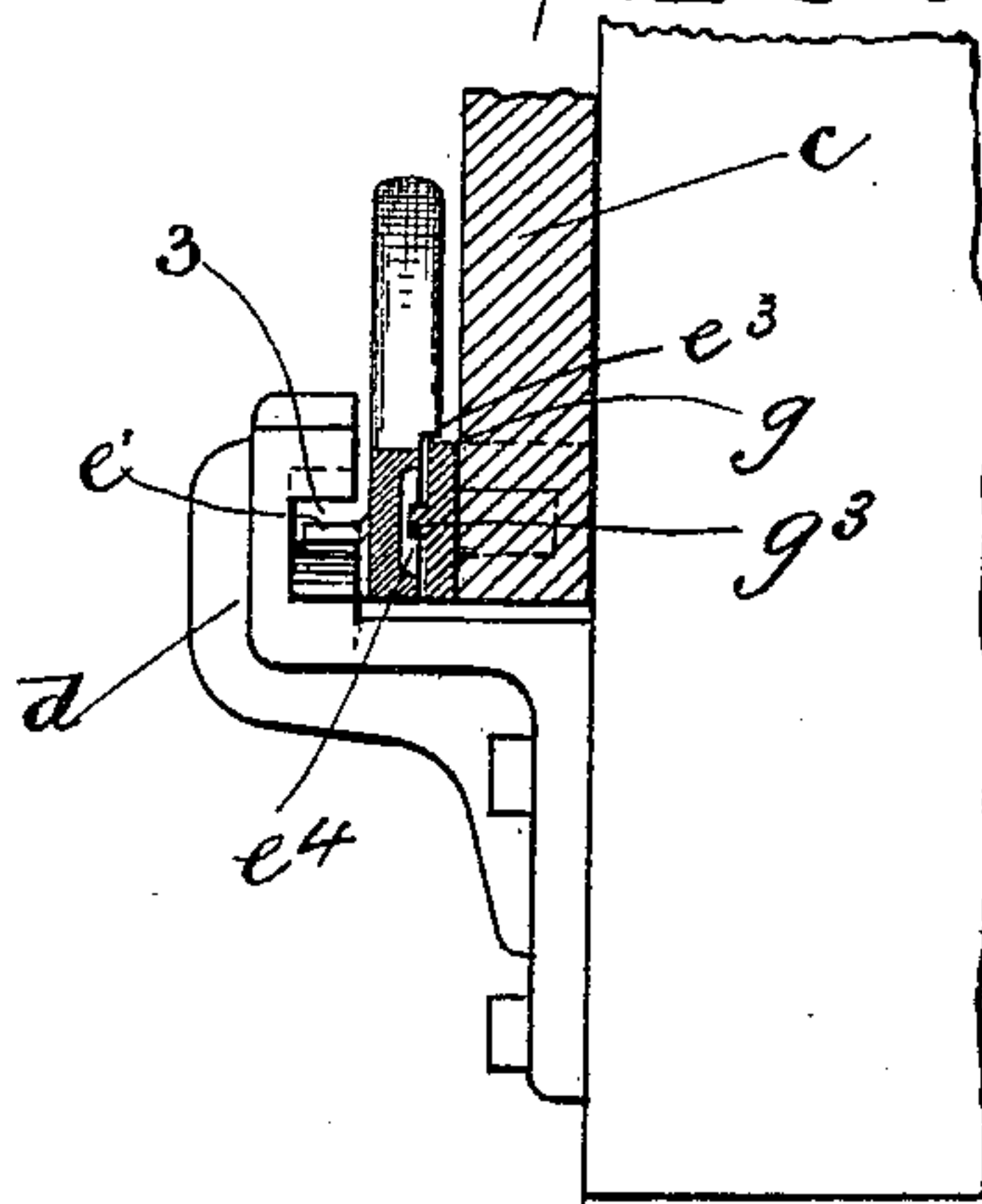


FIG 7

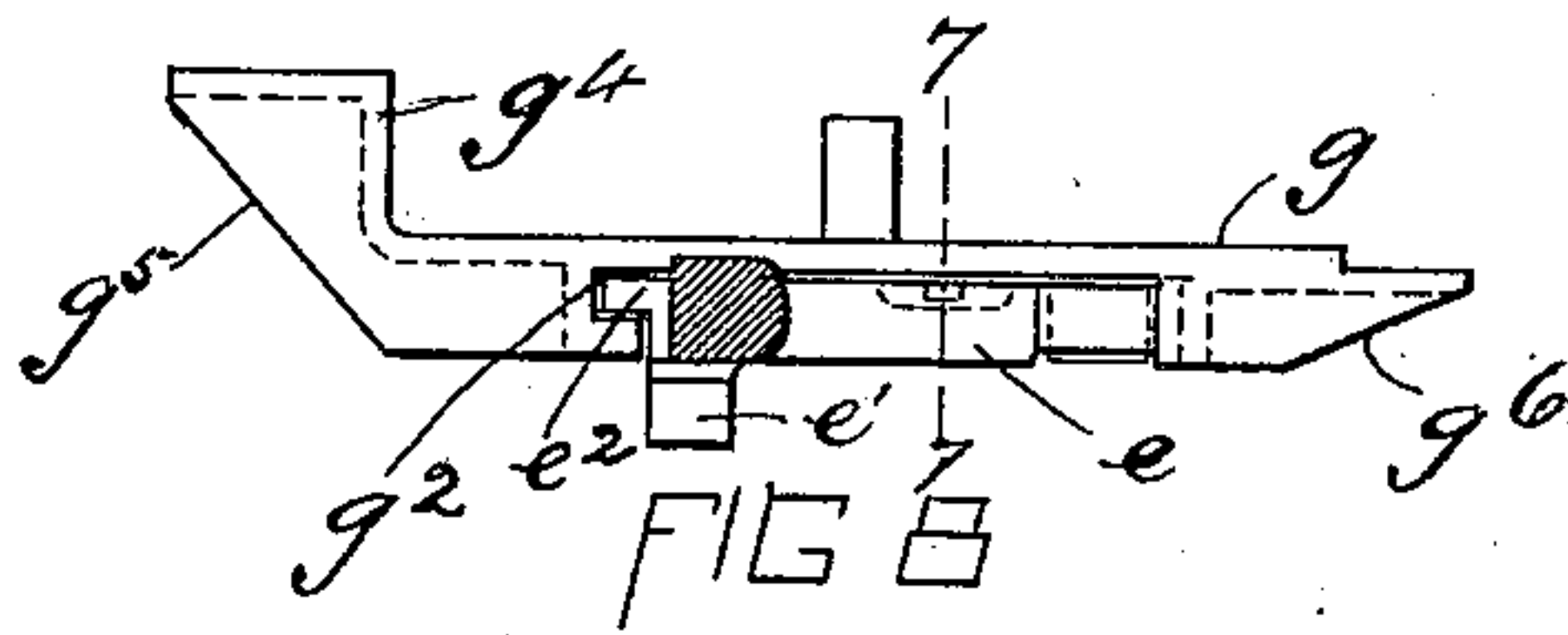


FIG 8

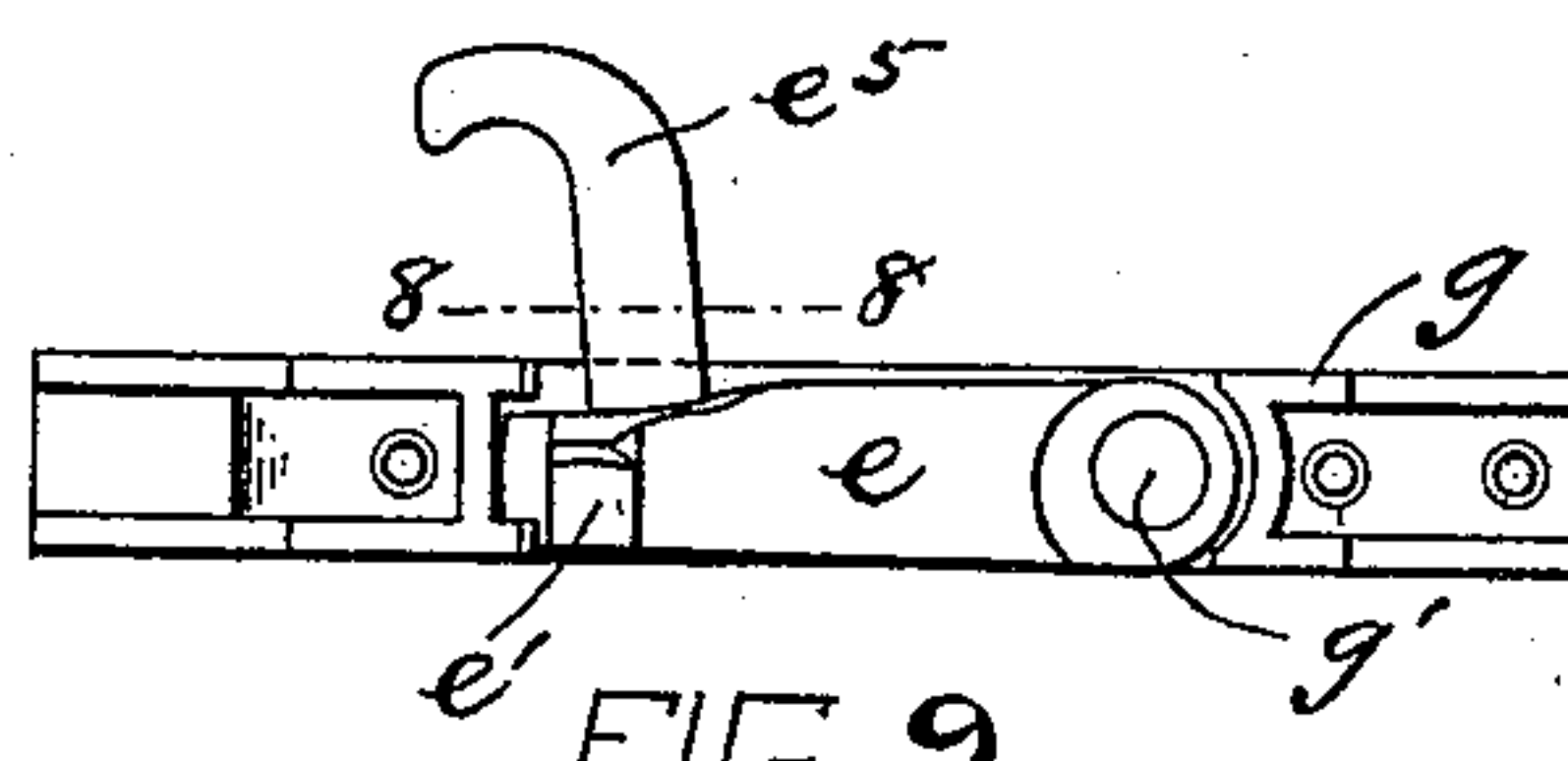


FIG 9

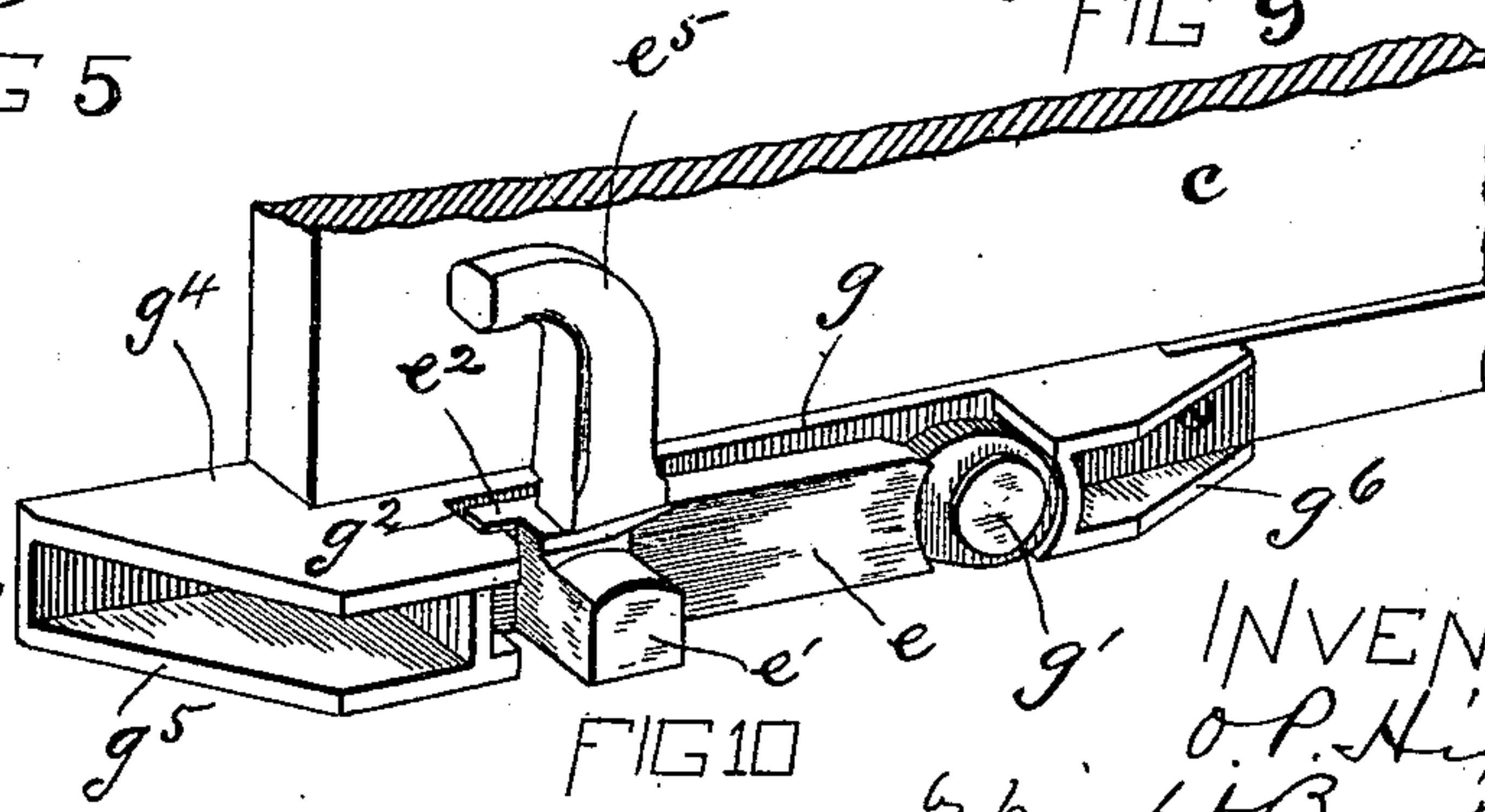


FIG 10

WITNESSES

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*Atty*



# UNITED STATES PATENT OFFICE.

OLIVER P. HIX, OF ROCKLAND, MAINE, ASSIGNOR TO THE DUNHAM MANUFACTURING COMPANY, OF MAINE.

## LATCH FOR SLIDING DOORS.

SPECIFICATION forming part of Letters Patent No. 459,906, dated September 22, 1891.

Application filed December 15, 1890. Serial No. 374,781. (No model.)

*To all whom it may concern:*

Be it known that I, OLIVER P. HIX, of Rockland, in the county of Knox and State of Maine, have invented certain new and useful Improvements in Latches for Sliding Car-Doors, of which the following is a specification.

This invention has for its object to provide simple, effective, and durable devices for latching or holding a sliding freight-car door either in its opened or in its closed position to prevent the door from moving accidentally from either of said positions.

The invention consists in the improved latching devices which I will now proceed to describe and claim.

In the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of a portion of a freight-car and a portion of its sliding door, showing the door in its closed position and secured by my improved latching devices. Fig. 2 represents a similar view showing the door opened. Fig. 3 represents a side elevation, on a larger scale, of a portion of the car and door and the devices which co-operate to secure the door in its closed position. Fig. 4 represents a section on line 4 4 of Fig. 3, looking downwardly. Fig. 5 represents an elevation of the inner side of one of the brackets that are affixed to the car below the door. Fig. 6 represents a top view of the latch-holding plate which is attached to the forward end of the car-door. Fig. 7 represents a section on line 7 7 of Fig. 8. Fig. 8 represents a top view of the latch-holding plate and latch, the handle of the latch being shown in section on the line 8 8 of Fig. 9. Fig. 9 represents a side view of the latch-holding plate and latch; and Fig. 10 represents a perspective view of the same, together with a portion of the door.

The same letters and numerals of reference indicate the same parts in all the figures.

In the drawings, *a* represents a portion of a freight-car, and *b* represents a doorway in one side thereof.

*c* represents a door, which is of the usual sliding type and has wheels or trolleys at its upper edge running on a track affixed to the side of the car above the doorway.

*d d* represent metal brackets which are affixed to the car below the doorway. The upper part of each bracket is extended outwardly from the side of the car and then upwardly to form a lip 2, which projects a short distance above the lower edge of the door at the outer side of the latter and forms a stop or guard to prevent the door from swinging outwardly from the side of the car, the brackets, so far as this function of preventing the outward movement of the door is concerned, being well-known in connection with sliding doors and forming no part of my invention. I have, however, provided certain improvements in the construction of the brackets *d d*, to be presently described, whereby each bracket is enabled to serve as the fixed member of a latch which is adapted to hold the door in a fixed position, one of the brackets co-operating with a latch pivoted to the door to hold the latter in its closed position, while the other co-operates with the same latch in holding the door in its opened position.

In carrying out my invention I provide at the front portion of the door a swinging latch *e*, which is pivotally connected at *g'* to the door and is adapted to swing vertically at its forward end, the swinging end of the latch being provided with a lateral outwardly-extending lug *e'*, adapted to engage a socket or recess 4 in either of the brackets *d*. Each bracket has on the inner side of its vertical lip 2 a longitudinal slot 3, Fig. 5, from which slot the recess 4 extends. The edges of the slot 3 are curved, its lower edge presenting two curved inclines, which are lowest at the ends of the lip and rise to the mouth of the recess 4. Said slot is formed to receive the latch-lug *e'*, the said inclines acting on the under side of said lug to swing the latch upwardly when the motion of the door brings the lug into said slot until the lug reaches and drops into the recess 4, thus arresting the door and preventing it from moving in either direction until the lug is lifted out of said recess.

*g* represents a plate which is affixed to the door at the front lower corner thereof, said plate projecting outwardly from the front of said door and having in its projecting por-



tion a recess which receives the latch  $e$ , as best shown in Figs. 4, 8, and 10, the plate having a stud  $g'$  formed on or affixed to it and projecting into the recess to serve as the pivot for the latch. At the forward end of said recess is a slot  $g^2$ , formed to receive a tongue  $e^2$  on the latch  $e$ . The engagement of said tongue with the slot  $g^2$  serves to prevent the latch from swinging or moving laterally out of the recess in the plate  $g$ , so that the latch cannot be withdrawn from the recess by a horizontal movement.

The vertical movements of the latch are limited by suitable stops, one of which may be a shoulder  $e^3$  on the latch, bearing on the upper edge of the plate  $g$  and serving to limit the downward movement of the latch, while the other may be a pin or projection  $g^3$  on the plate  $g$ , entering a recess  $e^4$  in the latch, as shown in Fig. 7, and serving to limit the upward movement of the latch. The said stops are so arranged that the latch cannot swing in either direction far enough to remove the tongue  $e^2$  from the slot  $g^2$ . Hence the latch cannot be accidentally disengaged from the plate  $g$ . The forward end of the plate  $g$  is preferably provided with an offset  $g^4$ , which extends over the front edge of the door, the outer side of said offset being beveled, as shown at  $g^5$ . The beveled portion  $g^5$  constitutes the front end of the plate  $g$  and serves to prevent a sharp concussion on the forward bracket  $d$  when the door is being closed in case the door is swung outward far enough to strike the vertical ear 2 on said bracket, the beveled end  $g^5$  striking said ear easily and enabling the ear to press the door inwardly as it reaches its closed position.

The latch has an upwardly-projecting handle  $e^5$ , which extends above either bracket  $d$  and enables the operator to conveniently raise the latch to release the door.

From the foregoing it will be seen that when the door is being opened the lug  $e'$  of the latch  $e$  on reaching the rear bracket  $d$  will be raised by the inclined lower side of the slot 3 in said bracket until the lug drops into the recess 4, the door being thus securely held in its opened position. When the door is being closed, the latch is again lifted by the bearing of its lug on the inclined lower side of the slot 3 in the forward bracket until said lug drops into the recess 4 in said bracket, the door being thus securely held in its closed position.

I do not limit myself to the exact details of construction of the latch, nor to the described

manner of securing it to the door, but may depart from the same in various particulars.

The plate  $g$  has a beveled portion  $g^6$  at its rear end adapted to co-operate with the rear bracket  $d$  in preventing a shock or jar when the plate  $g$  strikes said bracket.

I claim—

1. The combination, with a car and its sliding door, of the brackets  $d$   $d$ , attached to the side of the car below the doorway and near the opposite ends thereof, each having a flange or ear arranged to prevent the door from swinging outwardly, a recess within said ear, and a latch pivoted to the forward portion of the car-door and adapted to enter the recess in the forward bracket and thereby secure the door in its closed position, and to enter the recess in the rear bracket, and thereby secure the door in its opened position, as set forth.

2. The latch-holding plate adapted for attachment to a car-door and provided in its outer side with a recess having at one end a slot  $g^2$ , combined with the latch pivotally connected with the plate near one end of said recess and provided at its swinging end with an outwardly-projecting lug adapted to engage a fixed bracket on the car and with a tongue  $e^2$ , arranged to enter the slot  $g^2$ , as set forth.

3. The combination of the door, the latch-holding plate formed to bear on the outer side of the door and having a beveled offset at its front end, a latch pivotally connected with the plate, and the fixed brackets attached to the car below the door and near the opposite ends of the doorway, said brackets being formed to engage the latch and to co-operate with the beveled end of the plate in forcing the door to its seat, as set forth.

4. The bracket adapted for attachment to a car and having the offset ear 2, provided in its inner side with the curved slot 3 and recess 4, combined with the latch-holding plate adapted for attachment to the car-door and provided with a pivoted latch having a lug adapted to enter the slot 3 and engage the recess 4, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 11th day of December, A. D. 1890.

OLIVER P. HIX.

Witnesses:

H. E. BOWSER,  
THOS. NOONAN.